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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/888,158	06/25/2001	William A. White III	SAA-57	8179

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SQUARE D COMPANY
INTELLECTUAL PROPERTY DEPARTMENT
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PALATINE, IL 60067

EXAMINER

HUYNH, KIM T

ART UNIT	PAPER NUMBER
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2112

DATE MAILED: 06/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/888,158

Applicant(s)

WHITE ET AL.

Examiner

Kim T. Huynh

Art Unit

2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 3/31/05.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 June 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-7, 10-21, 29-32, 35-36, 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (US Patent 6,192,281) in view of Applicant Admitted Prior Art (AAPA)

As per claims 1, 35, Brown discloses system comprising:

- a device (fig.9, 100 ie controller) having an embedded automation application(ie software configurations), the device being operably connected to a communication bus(fig.9, 109 ie bus); (col.3, lines 4-43)
- a fieldbus coupler(ie interface) operably connected to the automation application via the communication bus; (col.3, lines 4-43, ie controller 110 (software configurations) coupled to interfaces 302 and 105 via bus 109 communicate to fieldbus devices) (col.5, line 57-col.6, line 42)
- a network being operably connected to the fieldbus coupler, the network including a network node having a table for holding data and parameters transmitted or received throughout the system; and (col.3, lines 4-35)

- a protocol utilized by the automation application to access the network node. (col.14, line 48-col.15, line 9)

Brown discloses all the limitations as above except a device is being a modbus device. However, However AAPA discloses modbus, profibus, deviceNet, CANOpen and Ethernet-based networks are utilized in factory automation and related fields for communicating between data processing systems and peripheral devices.(page 1 of the spect.)

It would have been obvious one having ordinary skills in the art at the time the invention was made to incorporate AAPA's teaching into Brown's system so as to be widely used for factory automation applications.

As per claims 2, 29, modified of Brown discloses wherein the protocol comprises:

- a modbus message frame comprising: (col.9, lines 40-59)
- a header having an address identifier; (col.9, lines 40-59)
- a trailer having an error verifier; and, (col.9, lines 40-59)
- a Modbus function function code encapsulated between the header and the trailer, wherein the automation application transmits a network message embedded within the Modbus function code to the network node table. (col.3, lines 4-35), (col.2, lines 47-63)

As per claims 3,17, 30, modified of Brown discloses wherein the Modbus function code comprises a Modbus sub-function code. (col.9, lines 40-51)

As per claims 4, 18, Brown discloses wherein the Modbus function code comprises: a read/write function code having a read/write bit, the read/write

function code further being operably responsive to the read/write bit wherein the read/write function code reads or writes the network node table. (col.9, lines 40-65)

As per claims 5, 19, 31, modified of Brown discloses wherein the read/write function code comprises: an index and a sub-index defining a location within the network node table; and, a starting address, the starting address is an offset into the network node being referenced by the index and the sub-index. (col.9, lines 40-65)

As per claims 6, 20, 32, modified of Brown discloses wherein the read/write function code comprises: a byte amount defining an amount of bytes, the starting address and the byte amount defining a portion within the network node table to be read or written by the read/write function code wherein the automation application can directly access the portion of the network node table. (col.9, lines 40-65) (col.7, lines 9-61)

As per claims 7, 21, modified of Brown discloses wherein the Modbus function code comprises a plurality of Modbus function codes encapsulated within the Modbus message frame. (col.2, lines 47-63)

As per claim 10, modified of Brown discloses an automation control system comprising:

- a fieldbus coupler(ie interface) operably connected to a Modbus communication bus; (col.3, lines 4-43, ie controller coupled to

interfaces 302 and 105 via bus 109 communicate to fieldbus devices)
(col.5, line 57-col.6, line 42)

- a Modbus device having an automation application, the Modbus device being operably connected to the fieldbus coupler via the Modbus communication bus; (col.3, lines 4-43, ie controller 110 (software configurations) coupled to interfaces 302 and 105 via bus 109 communicate to fieldbus devices) (col.5, line 57-col.6, line 42)
- a Modbus protocol for communicating between the Modbus device and the fieldbus coupler; (col.14, line 48-col.15, line 9)
- a network communication bus being operably connected to the field bus coupler(ie interface); (col.3, lines 4-43, ie controller 110 (software configurations) coupled to interfaces 302 and 105 via bus 109 communicate to fieldbus devices) (col.5, line 57-col.6, line 42)
- a network device being operably connected to the fieldbus coupler via the network communication bus; (col.3, lines 4-43, ie controller 110 (software configurations) coupled to interfaces 302 and 105 via bus 109 communicate to fieldbus devices) (col.5, line 57-col.6, line 42)
- a network protocol for communication between the network device and the fieldbus coupler; (col.14, line 48-col.15, line 9)
- the modbus device and the network device being in communication with each other wherein the fieldbus coupler facilitates communication between the Modbus device and the network device by converting to

and from the Modbus protocol and the network protocol. (col.14, line 48-col.15, line 9)

As per claim 11, modified of Brown discloses wherein the fieldbus coupler comprises:

- a fieldbus physical layer transceiver being operably connected to the Modbus communication bus; (col.4, line 65-col.5, line 67)
- a Modbus to network bridge being operably connected to a network driver and the physical layer transceiver; (col.4, line 65-col.5, line 67)
- a fieldbus driver being operably connected to the network driver; (col.4, line 65-col.5, line 67)
- a fieldbus network table being operably connected to the network driver; and, (col.4, line 65-col.5, line 67)
- a fieldbus network transceiver being operably connected to the network driver and the network communication bus. (col.4, line 65-col.5, line 67)

As per claim 12, modified of Brown discloses wherein the Modbus device comprises:

- a Modbus physical layer transceiver being operably connected to the Modbus communication bus; (col.4, line 65-col.5, line 67)
- a Modbus driver being operably connected to the Modbus physical layer transceiver; and, (col.4, line 65-col.5, line 67)

- an automation application being operably connected to the Modbus driver. (col.4, line 65-col.5, line 67), (col.3, lines 4-35)

As per claim 13, modified of Brown discloses wherein the network device comprises:

- a network transceiver being operably connected to the network communication bus; (col.4, line 65-col.5, line 67)
- a network driver being operably connected to the network transceiver; (col.4, line 65-col.5, line 67)
- a network table being operably connected to the network driver; and, a field application being operably connected to the network driver. (col.4, line 65-col.5, line 67), (col.3, lines 4-35)

As per claim 16, modified of Brown discloses Modbus communication protocol for an automation system executing an automation application, the automation system comprising a fieldbus coupler being operably connected between a Modbus network having a Modbus device and a network having a network device including a network table, the Modbus communication protocol comprising: a Modbus message frame comprising:

- a header having an address identifier; (col.9, lines 40-59)
- a trailer having an error verifier; and, (col.9, lines 40-59)
- a modbus function code encapsulated between the header and the trailer, wherein the automation application transmits a network message

embedded within the Modbus function code to the network device table.

(col.3, lines 4-35), (col.2, lines 47-63)

As per claim 36, modified of Brown discloses wherein the first protocol is a Modbus protocol. (col.4, lines 29-65)

As per claim 38, Brown discloses the system further comprising a plurality of additional network nodes utilizing the second protocol in the network. (col.4, lines 29-65)

3. Claims 24-26 are rejected under 35 U.S.C. 102(e) as being anticipated by Dube's et al. (US Patent 6,434,157)

As per claims 24, Dube discloses method of transmitting a network message in an automation system comprising a first network and a second Modbus network, the method comprising the steps of:

- providing a network message embedded within a Modbus function code; (col.2, lines 7-15)
- transmitting the Modbus function code to a fieldbus coupler between the first network and the second modbus network; (col.2, lines 7-30)
- extracting the network message by the fildbus coupler; and, (col.1, lines 58-65)
- transmitting the network message to the network node and, (col.2, lines 7-15)

- executing the network message wherein the network node being capable of interacting with the Modbus network. (col.2, lines 1-15)

As per claim 25, Dube discloses accessing a portion of the table. (col.2, lines 17-25)

As per claim 26, Dube discloses embedding a network response message within a response Modbus function code; and, transmitting the response Modbus function code to the Modbus network. (col.2, lines 1-30)

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 8-9, 22-23, 27-28, 33-34, 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brown et al. (US Patent 6,192,281) in view of Stutz (Pub No US20020128986)

Brown discloses all the limitations as above except the network is CANopen. However, Stutz discloses network controller handles CANopen related protocol. [0047]

It would have been obvious to one having ordinary skills in the art at the time the invention was made to incorporate Stutz's teaching into Brown's system so as to have the advantages to have communication for a franking machine which would overcome the disadvantages of previous franking machines. [0016]

Response to Amendment

6. Applicant's amendment filed on 3/31/05 have been fully considered but are moot in view of the new ground(s) of rejection.

Conclusion

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kim Huynh whose telephone number is (571)272-3635 or via e-mail addressed to [kim.huynh3@uspto.gov]. The examiner can normally be reached on M-F 9:00AM- 6:00PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Rinehart can be reached at (571)272-3632 or via e-mail addressed to [mark.Rinehart@uspto.gov].

The fax phone numbers for the organization where this application or proceeding is assigned are (703)872-9306 for regular communications and After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (571)272-2100.



**PAUL R. MYERS
PRIMARY EXAMINER**

Kim Huynh

June 13, 2005